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Heliotherapy in Genitourinary Tuberculosis.—Tuberculosis of the genitourinary tract, while not a common disease, occurs frequently enough as a complication of generalized tuberculosis to warrant the serious consideration of the profession. A brief review of the literature is given. This shows that in this form of tuberculosis the treatment is mainly surgical. The results are far from brilliant. Rollier says that in the majority of cases the rôle of heliotherapy is postoperative and prophylactic, rather than locally curative. Genitourinary tuberculosis is a local manifestation of a generalized disease, and treatment, to be curative and permanent, must be directed toward the disease rather than to a local manifestation. In none of the author's cases has he seen a manifest lesion of the genitourinary system of the type considered so favorable for operation, in which he has not been able to demonstrate tuberculous lesions in some other part of the tract, and this has been borne out at numerous postmortem examinations. The treatment recommended is heliotherapy. The patient is told that it will be necessary for him to continue treatment uninterruptedly for at least a year, probably two years. Insolation is carried out according to Rollier's technique: the feet from the ankles are first exposed for five minutes, front and back, with gradual progression by five-minute intervals, until the whole body is getting two hour's insolation in the Summer and three hours in the winter. *Results:* The general improvement both mentally and physically is marked. Locally, the effects are no less striking; this is noticeable in the superficial lesions of the testis and scrotum. After about two weeks of treatment there is apparently an activation of symptoms, and a recurrence of local pain, or aggravation if it is still present. The hard indurated areas soften and soon break down. There is apparently a stirring up of the general system to active reaction, in contrast to the sluggishness before, which allowed the smouldering local process to progress slowly. The local diseased area is expelled; the tissues heal, and that is the end of that particular focus. One after the other, these local foci are eradicated in this way until the disease is healed. When the foci are small, they are evidently absorbed without going through the process of breaking down. In the kidney cases the results are less striking but equally satisfactory, not because it is any less progressive but because symptomatically there is less change. It has been a uniform observation that in no case has there been an extension of demonstrable disease after treatment has been begun, and in every case except one, the patient being a full-blooded Indian, there has been a steady clinical and symptomatic improvement after the initial symptomatic aggravation during the first few weeks of treatment. Two cases are reported. *Conclusions:* 1. Genitourinary tuberculosis is a local manifestation, and that only of general disease. 2. Local treatment, besides being uselessly mutilating cannot be curative. 3. Surgical procedures give a false sense of security, thus minimizing the important necessity of general hygienic treatment. 4. Heliotherapy arrests the progress of pathological change and seems to promise a cure of tuberculosis of the genitourinary tract.—*Heliotherapy in the Treatment of Genitourinary Tuberculosis, N. A. Myll, J. Am. M. Ass., December 6, 1924, lxxxiii, 1834.*—(*B. T. McM.*)

Treatment of Male Genital Tuberculosis.—For the operative treatment of male genital tuberculosis the question of the route of infection of the epididymis becomes important. While Baumgarten, Kramer and others believe in the testifugal route

mainly, there are others who lean to the testipetal. In every inflammation of the epididymis the nonspecific, tuberculosis-like, chronic epididymitis comes into consideration from a differential diagnostic standpoint, and diagnosis must be made by histological test of excised tissue. If tuberculosis is absent, then the abscess must be incised or the abscess membrane excised, according to Payr, and, in case of marked purulent liquefaction, epididymectomy is to be done. With widespread involvement of the testicle and vas deferens, castration is required. In unilateral tuberculosis one must be satisfied with conservative treatment. Hemicastration may be performed in older people, while in younger individuals epididymectomy should be cautiously considered. Epididymectomy should be performed only when the testicle is found to be macroscopically normal after incision; otherwise hemicastration is advisable. In addition, all other usual general methods of tuberculosis treatment should be utilized. A coincident extirpation of the seminal vesicles is not recommended. In double epididymal tuberculosis hemicastration, with resection of the opposite epididymis, is the procedure of choice.—*Über die Behandlung der männlichen Genitaltuberkulose und der chronischen unspezifischen Epididymitis, E. Schwarz, Arch. klin. Chir., 1923, cxxvii, 474.*—*(H. J. C.)*

Renal Tuberculosis.—In two cases of nephrectomy for renal tuberculosis the disease became manifest only two months before operation, in spite of advanced anatomic lesions and a functional deficiency of one-third for one and two-fifths for the other. The onset uniquely showed itself by hematuria; then pollakiuria followed. In one of the patients, aged over 60, all the symptoms seemed to indicate a right-sided involvement, but catheterization showed the integrity of this kidney; nephrectomy on that basis alone would have led to removal of the less involved kidney. On the other hand, the phenolsulphonephthalein test showed a lesion very plainly, and better still, the amount of urea secretion showed the deficiency of one kidney in relation to the other. Good results followed operation and the number of voidings diminished.—*Tuberculose rénale, Phelip, Meeting, Soc. Nat. de. Méd. et des Sciences Méd. de Lyon, June 11, 1924, reported in Presse Méd., July 5, 1924, no. 54, 575.*—*(B. T. McM.)*

Early Diagnosis of Renal Tuberculosis.—It is believed that the bladder condition will reveal the diagnosis without waiting for the results of animal inoculation. The earliest lesions are not necessarily in the trigone. The infection is not a contact infection, as a result of the urine passing over the mucous membrane, but results via the lymph channels, and the usual specific nodules are lymph nodules.—*Die Frühdiagnose der Nierentuberkulose, A. Hübner, Arch. f. klin. Chir., 1923, cxxvl, 354.*—*(H. J. C.)*

Tuberculosis of Horseshoe Kidney and Heminephrectomy.—The right half of the kidney in this case was riddled with tuberculous cavities. It was removed after section of the isthmus.—*Rein en fer à cheval; tuberculose de le moitié droite; heminéphrectomie, Escat, Société de Chirurgie de Marseille, May 5, 1924, reported in Presse Méd., July 12, 1924, no. 56, 595.*—*(A. P.)*

Tuberculous Nephrectomy Wounds.—Tuberculous nephrectomy wounds occasionally break down despite all precautions. Of a series of 89 cases of nephrectomy for renal tuberculosis, in 16 there was complete dissolution of the wound following operation. In these 16 cases disunion of both the muscles and the skin occurred, usually in the second or third week after operation. After separation of the wound-edges and destruction of the fatty capsule by the infection, a large granulating cavity results. The failure of tuberculous cavities such as these to heal has long been recognized to be due to the fact that as the granulation tissue grows, tubercles develop in it, and there is a generalized lymphocytic infiltration with endarteritis. This diminishes the blood supply, so that the more superficial granulations tend to slough, resulting in extreme slowness in the obliteration of the cavity. Several procedures were tried without avail to promote the closure of these. In two cases the cavity was thoroughly curetted several months after operation, and in each case closure occurred within six months, while in the remaining cases that it has been possible to follow none have closed within this time.—*Secondary Closure of Tuberculous Nephrectomy Wounds, C. Y. Bidgood, J. Am. M. Ass., November 15, 1924, lxxxiii, 1573.*—*(B. T. McM.)*

Case of Tuberculosis of Ureter.—A man of 35 was referred on account of an intractable gonococcal ureteritis, accompanied by stricture and peri-ureteritis. The peri-ureteral focus was extirpated, but the contained pus, as well as the ureteral secretion, harbored tubercle bacilli. Ureteroscopic examination showed numerous yellow granulations, about the size of millet seeds. The patient died of pulmonary tuberculosis

and autopsy confirmed the existence of a tuberculous ureter. There existed a cold abscess about the ureter and a small tuberculous abscess of the prostate, several tuberculous ulcerations of the bladder, and a small caseous focus in the left kidney. The perirureteral focus appears to have been the primary one.—*Un cas de tuberculose de l'urètere, A. Boeckeland and C. Oberling, Meeting, Soc. d. Méd. du Bas-Rhin, May, 1924, reported in Presse Méd., July 19, 1924, no. 58, 620.*—(*A. P.*)

Meningeal and Cerebellar Tuberculosis with Syndrome of Cerebral Tumor.—Signs appeared first of meningitis, shown to be tuberculous by examination of the spinal fluid; later came the symptoms of tumor. The eye grounds showed bilateral papillary stasis. Neurological examination pointed toward the cerebellum, especially percussion of the right cerebellar fossa, which was painful. There was diminished auditory acuteness on this side and external oculomotor paralysis. Autopsy after two months showed a tuberculous meningitis and two or three cerebellar tubercles, the size of large peas, involving the right lateral hemisphere.—*Méningite tuberculeuse et tubercules du cervelet ayant donné un syndrome de tumeur cérébral chez une fillette de 12 ans, Cassoute and Poinso, Meeting, Comité Médicale des Bouches-du-Rhone, May, 1924, reported in Presse Méd., June 25, 1924, no. 51, 551.*—(*A. P.*)

Case of Adult Tuberculous Meningitis.—The patient, a man of 31, had only a slight headache and positive Kernig sign. Autopsy showed no meningeal involvement, no tuberculous brain lesion.—*À propos d'un cas de meningite tuberculeuse de l'adulte, Bilouët and Pauwels, Meeting, Soc. de Méd. du Nord, May, 1924, reported in Presse Méd., June 25, 1924, no. 51, 551.*—(*A. P.*)

Tannenbaum Potash Test in Diagnosis of Tuberculous Meningitis.—The potash reaction in the macroscopic examination of spinal fluid in cases of suspected tuberculous meningitis is of value. The persistence of air bubbles in the spinal fluid after shaking with potash is, however, not to be attributed to the cell content, but to the fibrinogen content of the liquor. It is the disappearacce of the fibrin on standing which makes it necessary to perform the test on freshly removed fluid. The cells of spinal fluid do not disappear rapidly on standing.—*Zur Diagnose der Meningitis, insbesondere der tuberkulosen, K. Waltner, München. med. Wchnschr., Aug. 15, 1924, lxxi, 1134.*—(*E. R. L.*)

Tannenbaum Potash Test in Diagnosis of Tuberculous Meningitis.—The potash reaction, which Tannenbaum used for the macroscopic examination of urine for pus, was applied to spinal fluid. Purulent meningitis can usually be distinguished by the marked turbidity of the spinal fluid, but the fluid in tuberculous meningitis is often crystal clear. In these cases cell increase can usually be detected macroscopically by adding potash solution. One to three drops of the solution are added to the liquor and the mixture is shaken. If bubbles persist cell increase is indicated. The test must be made on fresh fluid. Normal spinal fluid remains clear after such treatment. Lymphocytes and leucocytes are not distinguished by the test. The fluid must be free from blood.—*Zur Diagnose der Meningitis, insbesondere der tuberkulosen, O. Herz, München. med. Wchnschr., July 11, 1924, lxxi, 946.*—(*E. R. L.*)

Iodoform-Glycerine-Tannin in Skin Tuberculosis.—Iodoform-glycerine-tannin was used in the treatment of skin tuberculosis, cold abscesses, fistulae, etc., with different results in different types of disease. In all of the cases about two-thirds gave good results, which is a higher percentage than by other modes of treatment. The course of treatment by this means, if not always satisfactory in results, has the merit of being of relatively short duration—only three or four weeks are required—and also of being inexpensive.—*Kochsalzbrei und Jodoformglycerinetannin in der Behandlung der Hauttuberkulose und der Kalten Abscesse im Kindesalter, K. Keilmann, Klin. Wchnschr., May 27, 1924, iii, 982.*—(*H. S. W.*)

Lupus of Scalp.—A case is presented, with histological examination, of primary lupus of the scalp in a woman, aged 67 years, free from all other cutaneous or visceral tuberculosis.—*Forme anormale de lupus tuberculeux atrophique de cuir chevelu, Meeting, Réunion Dermatologique de Strasbourg, July 20, 1924, reported in Presse Méd., August 12, 1924, no. 62, 656.*—(*B. T. McM.*)

Acute Disseminated Lupus Erythematosus.—Three fatal cases are reported. The patients were all adult females, one white and two colored. They all complained of something other than the skin lesions. Fever was present in all the cases; it was remittent and prolonged. Two of the patients had had several remissions, but relapses followed in both. Arthritis was present in every case. The characteristic features were pain, swelling, and tenderness of the joints with slight elevation of the surface tempera-

ture without redness. Radiographic examination of the joints showed nothing abnormal besides slight periarticular swelling, and in one case slight atrophy of the bones in the region of the affected joints, which was interpreted as being due to disease. The skin lesions were diffuse in all the cases. They occurred for the most part over the face, extremities, chest and trunk, and in two cases upon the palms as well. The lesions were dry and scaly, pinkish in color, and healed with slight scar formation and some spots of pigment and atrophy. Extreme tenderness with rather marked swelling of the muscles of the extremities was present. Profound prostration, sweats and delirium were also outstanding features of the cases. There was a moderate generalized lymph-node enlargement and in two cases the spleen was palpable. In one case there was a great increase in the size of the lymph nodes and spleen, as well as in the extent and severity of the skin lesions, with each exacerbation of fever. There was never any clinical evidence of tuberculosis in any of the cases. No petechiae were ever noted and there was no evidence of organic valvular heart disease.—*Acute Disseminated Lupus Erythematosus, Report of Three Fatal Cases, C. S. Keefer and A. R. Felty, Johns Hopkins Hosp. Bull., September, 1924, xxxv, 294.*—(*J. B. A.*)

Pseudotuberculosis in Man.—A number of cases of disease occurring during the suckling period and resembling that found in rodents is described, which on section presented the typical picture of pseudotuberculosis. The non-acid-fast organism found in the livers of the children resembled that of the pseudotubercle bacillus of rodents. The nodules showed no similarity to the structure of tubercles. There was a circumscribed necrosis of the parenchymal cells. Early childhood shows a certain disposition to the disease. Only bacteriological examination of the blood will determine the diagnosis *in vivo*. The literature contains a few cases in adults, in which the lower portions of the small intestines revealed an acute inflammatory condition involving the lymphatic tissues. The portal of entry is probably the digestive tract. In the suckling the germ enters the lymph and bloodstreams from the digestive tract, and produces a disease resembling acute miliary tuberculosis. It is possible that the bacilli are retained in the lower birth channels and during the passage of the head enter the mouth of the newborn. In adults they enter with the water and foods. Fraenkel describes two types of human pseudotubercle bacilli,—one gram-potitive and one gram-negative. Treatment must be carried out along immunological lines.—*Über Pseudotuberkulose des Menschen, E. Fraenkel, Ztschr. f. Hyg., 1924, ci, 406.*—(*H. J. C.*)

Pseudotuberculosis of Amebic Origin.—The case was that of a young woman who had lived in Indo-China to the age of 10. At the age of 23 she contracted an acute dysentery, rapidly relieved by the use of emetin. Some months later she began to cough and lose weight. She had fever with signs of congestion at the apex of the right lung, and was six months in bed. She returned to France and was treated three months in a sanatorium for pulmonary tuberculosis. A year ago she went to Algeria and easily passed through a pregnancy. Some little time later she developed a daily fever. She was sent to a hospital, where an X-ray examination of the chest was negative, auscultation revealed nothing definite, and no tubercle bacilli could be found in the scanty sputum. Treatment by emetin caused all symptoms to disappear. She had since had two attacks of very painful hepatitis with fever, also responding to emetin.—*Pseudotuberculose d'origine amibienne, Gillot, Sarrony and Bure, Meeting Soc. d. Méd. d'Alger, June 8, 1924, reported in Presse Méd., July 26, 1924, no. 60, 640.*—(*A. P.*)

Pulmonary Amebiasis and Amebic Bronchitis.—For a long time pulmonary abscess of amebic origin had been recognized, yet always considered secondary to hepatic abscess. Recent facts have shown that there are primary amebic abscesses of the lung, and that there exist also amebic bronchitides, without abscess of either lung or liver, and characterized by the presence of living amebae in the sputum. One may classify the manifestations of pulmonary amebiases as: (1) lung abscess associated with liver abscess, (2) isolated lung abscess, and (3) amebic bronchitis. The ameba, to pass from the liver to the lung, generally progresses by the lymphatic route through the connecting ligaments, diaphragm, and pleura to the base of the lung. Another route is by the blood of the subhepatic veins, inferior vena cava, and pulmonary artery. Clinically, the patient may have an enlarged painful liver, with subicterus, irregular fever, chills, and sweats, and pain in the shoulder. He then begins to cough as signs of congestion at the right base and a diffuse bronchitis appear. He then expectorates dark pus with black lumps, and later blood, a state of chronic hemoptysis; finally he begins to waste. Isolated pulmonary amebiasis is rare. Lautman has described an initial stage marked by severe pains, violent cough,

and mucous expectoration. After a brief amelioration comes the phase of necrotic pneumonia, with bloody glairy sputum and physical signs at the right base. Next comes the period of suppuration, with purulent sputum, hemoptyses, and evidences of cavity. The terminal period is characterized by progressive cachexia, septic phenomena, and cerebral metastases. The evolution of amebic abscess may be very chronic and simulate tuberculosis. Cordier has recently published 3 new cases, with signs of chronic suppuration at the base of the left lung, cured by emetine. Leriche Garin and Manson Bahr have also reported cases. It may be difficult to obtain a clear history of amebic dysentery. It is possible that, coming from the intestine, by way of the portal vein, the ameba traverses the liver, and gains the lung by way of the inferior vena cava and pulmonary artery. Although its diameter is 20 to 60 micra, it may, by retraction, pass through the hepatic capillaries, the diameter of which is 10 to 15 micra. It is also possible that the ameba reaches the lung directly by inhalation. Pure amebic bronchitis has been described particularly by Petzetakis, who discovered a variety of bronchitis characterized by the constant presence in the sputum of *ameba histolytica* and cysts. The beginning of amebic bronchitis is often sudden, marked by chills and elevated temperature, and followed by cough and expectoration, generally viscid, glairy and blood-streaked. Physical signs are those of chronic bronchitis, and radioscopy shows normal lung fields. The findings of amebae in the sputum is most important; the latter should be examined very soon after expectoration. The amebae contain red cells or cellular debris, and have a refractile ectoplasm and eccentric nucleus. These tracheobronchitides are characterized by their benign course, contrasting with the gravity of lung abscess. The patient may or may not have a history of dysentery. In favor of the view of inhalation infection is the fact that before the appearance of dysentery there has often been an acute bronchitis, and in the course of acute dysentery Petzetakis has found living amebae in the sputum and urine, indicating a generalized infection and amebemia preceding the dysenteric symptoms.—*Amibiase pulmonaire et bronchites amibiennes, J. Rouillard, Presse Méd., June 7, 1924, no. 46, 502.*—(*A. P.*)

Fusospirochetal Pulmonary Infections.—A combined clinical and pathological study is given of 37 cases of pulmonary infection caused by fusiform bacilli and spirochetes in association. Gram-positive streptococci, usually of the viridans type, nearly always accompanied these microörganisms. About the teeth the fusospirochetes were among the first to be recognized as normal inhabitants. They are especially numerous in heavy tartar deposits and about carious teeth and diseased gums. They may also be present in enormous numbers in the crypts of the faucial tonsils. It is not surprising, therefore, that under certain conditions these bacteria find their way to the lower respiratory tract, and give rise to definite lesions. Microörganisms, morphologically and culturally similar to those found in the teeth and tonsils, have been demonstrated in pulmonary abscess and gangrene, or as an infection superimposed on certain pathological lung states, such as bronchitis, bronchiectasis, tuberculosis and carcinoma. An important cause of such infection to-day is general anesthesia, particularly since tonsillectomy is so greatly in vogue. In a few cases the lesions develop without evident predisposing causes. While saprophytic under normal conditions, these fusospirochetes may become pathogenic agents, as appears to be the case when they are transported to the lungs. Because of this behavior, these microörganisms are referred to as "opportunists." Their pathogenicity, however, is low, requiring in the experimental animal relatively large doses to produce lesions. For the production of a putrid lesion the addition of a pyogen, particularly streptococci, is needed. From these observations it would seem that we are concerned with a combination of microörganisms, which thrive in symbiosis, and producing in the tissue a constant putrid lesion. The normal lung does not harbor these germs. They are derived from infections of the teeth and tonsils. The diagnosis of fusospirochetal infection depends on the proper examination of the sputum, together with clinical evidences of pulmonary involvement. Washed sputum is smeared on the slide gently, in order not to distort the spirochetes. Either 5 to 10 per cent carbol-fuchsin for five minutes, or the Fontana method, can be used for staining. The fusiform bacilli appear as typical forms, often barred and slightly curved. The spirochetes show anywhere from four to ten turns, resembling in morphology *Spirocheta vincenti* and *Spirocheta macrodentium* and *microdentium*. The cocci invariably associated with the above are gram-positive diplococci, often *Streptococcus viridans*, occasionally *Streptococcus hemolyticus*, and in some instances both. The lesions observed due to these bacteria were of great variety, depending to a large extent on the underlying factors, the resistance of the patient, and the behavior of the pathological process. In all, the tend-

ency to necrosis and the production of a foul-smelling lesion were the striking characteristics. The lesions studied included putrid bronchitis, bronchopneumonic consolidation with single abscess formation, diffuse forms of gangrene, and conditions in which tuberculosis, bronchiectasis or carcinoma were the underlying factors. The physical signs depended on the type of the lesion; they may be variable or insignificant. The foul expectoration, in which the causative microörganisms are demonstrable, is common to both the acute and chronic forms. The roentgen ray often gives valuable information. In all patients with putrid expectoration possible underlying predisposing lesions should be investigated. Tuberculosis, carcinoma or foreign bodies may be overlooked if the sputum and foul expectoration alone are considered. However, the error made is often the reverse; that is, to recognize the tuberculosis or foreign body and to disregard the possible complication of abscess or gangrene which may be the more serious condition. In the treatment of these conditions, neoarsphenamine has given some favorable results, especially in pulmonary abscess. In bronchiectasis this therapy can only influence the complicating fusospirochetal infection, and prevent possibly the formation of new cavitations. No permanent results can be expected. To obtain a recovery in gangrene the disease must be treated early. A patient with pulmonary abscess and gangrene should have the benefit of arsenical treatment before more radical procedures, such as pneumothorax and surgery, are instituted. The prevention of pulmonary abscess and gangrene will depend, to a considerable extent, on the elimination of sources of infection. It is, of course, impossible to remove completely the fusiform bacilli and spirochetes from the oral cavity, but much can be done to reduce their number. The teeth should be free of excessive tartar deposits. Pus pockets, carious teeth and pyorrhea, in which conditions these bacteria occur in great abundance, should be properly treated. Tonsils in which masses of them are prone to accumulate are best removed. In some, expression can be employed. Such procedures are especially indicated in the patient about to undergo anesthesia or tonsilectomy, and in patients with chronic bronchitis, bronchiectasis or pulmonary tuberculosis. —*Studies in Fusiform Bacilli and Spirochetes, IX. Their Rôle in Pulmonary Abscess, Gangrene and Bronchiectasis, I. Pilot and D. J. Davis, Arch. Int. Med., September 15, 1924, xxiv, 313.*—(*J. S. W.*)

Fusospirochetal Pulmonary Infection.—A case of pulmonary infection with the spirochetal and fusiform bacilli of Vincent, which closely resembled pulmonary tuberculosis, is described. The patient, aged 36, presented the picture of advanced pulmonary tuberculosis. The sputum, which was abundant and mucopurulent, sometimes blood-tinged, was always negative for tubercle bacilli. When examined immediately after it was coughed up, it was found to be almost a pure emulsion of spirochetae and fusiform bacilli, the microörganisms being morphologically identical with those seen in Vincent's angina. Although only a few moist râles were heard at the apices after coughing, X-ray studies of the chest showed areas of consolidation of varying density in the parenchyma of the lung, involving both upper lobes, and showing a striking similarity to the lesions seen in advanced, active pulmonary tuberculosis. Another feature of this case was the persistent and annoying abdominal pain, associated with alternating attacks of diarrhea and constipation. The true cause of these gastrointestinal symptoms was not determined. The general malaise, cough, expectoration, pulmonary consolidation and gastrointestinal symptoms disappeared after the second intravenous injection of neoarsphenamine (0.9 gm.). The patient gained 32 pounds and was hard at work two months later. He also received full doses of potassium iodide by mouth, and this drug may deserve some of the credit. Arsenic seems to be more or less a specific for all kinds of infection with Vincent's organisms, and arsphenamine appears to be the most efficacious of the arsenicals.—*Pulmonary Infection with the Spirochaetae and Fusiform Bacilli of Vincent, C. McNeill, Bull. Johns Hop. Hosp., November, 1924, xxxv, 368.*—(*J. S. W.*)

Sporotrichosis.—Infection with the sporothrix usually results in the formation of multiple, subcutaneous, infective granulomas, with a tendency toward central softening and ulcer formation. The bulk of the cases reported in the United States have shown such lesions distributed along the course of lymphatic vessels proximal to a primary sporotrichotic chancre. Four cases are reported because of unusual clinical pictures. One, a boy, aged 8, with long-standing generalized lesions on neck, arm and legs, showed on X-ray widespread bone involvement with considerable destruction, particularly at the small joints. Two younger sisters of the above patient presented recent local manifestations of the

disease in the cervical regions, subsequent to the puncturing of the ears for earrings. The disease began with small, reddened, indurated spots on the lobes of the ears. A fourth case, an ex-soldier, presented lesions of the feet resembling epidermophytosis. Sporothrix in pure culture was obtained from the above cases after repeated trials. The first three cases were treated successfully with small doses of potassium iodide. The fourth case was treated with Whitfield's ointment and roentgen rays. When bone liquefying abscesses occur, this disease may be mistaken for tuberculosis.—*Sporotrichosis, A Clinical and Bacteriological Study of Four Cases with Unusual Clinical Manifestations, W. H. Guy and F. M. Jacob, J. Am. M. Ass., November 22, 1924, lxxxiii, 1663.*—(*J. S. W.*)

Psittacosis.—This disease, caused by a specific microörganism, *B. psittacosis*, often affects parrots, especially when imported in large numbers. The symptoms are loss of appetite, debility, drowsiness, drooping of the wings and severe diarrhea, sometimes associated with hemorrhage. Death may be preceded by convulsions. The mortality seems to be over 50 per cent. The disease appears to occur mainly, if not entirely, in newly imported birds, or those which have come in contact with them on their arrival. Two cases of psittacosis in human beings are reported, one of them fatal. It is a striking fact that a disease which is obviously of abdominal type in the bird is seldom associated with abdominal symptoms in the human being, but takes the form of an atypical pneumonia, with or without additional bronchitis. The onset is generally acute, often with a rigor, and the fever is usually continuous, highest during the first week or so, with a tendency to fall by lysis, and lasting in cases which recover from two to three weeks, sometimes a little longer. Mental depression is a marked feature, and headache is common early. The spleen may be enlarged; rose spots and even petechiae may appear, but do not seem to be common. The mortality is about 40 per cent. It is difficult to obtain the bacillus from the human being during life, but it has been found in the heart's blood after death.—*A Note on Psittacosis, C. L. Gulland, Brit. M. J., August 23, 1923, no. 3321, 308.*—(*J. B. A.*)

Pneumonokoniosis.—Calmette and Guerin's original publication on the intestinal origin of pulmonary tuberculosis suggested to Vansteenberghe and Grysez the idea that particles of dust ingested might pursue a similar course, and they concluded, after some experimental work, that "physiological anthracosis" is due, for the most part, to absorption of such ingested dust. Kuss and Lobstein challenged this and affirmed the aerogenic origin of such anthracosis. Calmette, Vansteenberghe and Grysez then carried on further experiments and found that colored dusts of fine dimensions traversed the intestinal wall, and in the guinea pig were transported by the lymph and blood to the lung parenchyma, where there were abundant deposits under the visceral pleura. They noted, as did Kuss and Lobstein, an inhalation anthracosis which, however, they believed differed entirely from that of sinkers and miners. Later, Kuss and Lobstein, in an address before the Academy of Sciences, concluded that fine atmospheric dust particles readily penetrate to the alveoli through the air passages, while the normal intestinal wall is much less permeable, and when penetrated the dust usually gathers in the mesenteric nodes, that passing to the lungs being insignificant. Herman later presented to the Belgian Academy experimental work showing that ordinary pulmonary anthracosis in the adults may be, in part, of intestinal origin, and that from a pathological viewpoint it is often difficult to determine the pathway of invasion, interstitial impregnation of the lung occurring in either event, but that the ordinary route is through the respiratory tract. When carbon particles are injected into the circulation of experimental animals the liver, spleen and bone marrow also act as depots. If at autopsy only the lungs are infiltrated, one is justified in assuming an aerogenic origin; however, man often breathes through his mouth and may swallow quantities of dust. Although Calmette's thesis is of academic interest, practical prophylactic measures should be directed toward avoiding the respiration of dust. A spray of water, passage of the air through filters, mechanical aspiration, energetic ventilation, are all valuable. Masks should only exceptionally be resorted to. Calmette's thesis of the intestinal origin of tuberculous infection is briefly touched on; according to this view, localization in the apices of the lung is due to slow circulation there and very fine vascularization. Herman has found, however, that although bacilli in finely divided emulsion may traverse the intestinal mucosa they form specific lesions either in the mesenteric nodes or other organs. In the guinea pig all parts of the intestinal tract may be penetrated except the stomach. This, however, is not entirely analagous to the case of inert particles, as carbon, which has little effect

in stimulating leucocytosis or phagocytosis until it reaches the fixed tissue cells.—*A propos de pneumoconioses, Herman, Rev. Belge d. l. Tuberc., April, 1924, no. 4, 117.—(A. P.)*

Iron-Stone Phthisis.—A case of phthisis in an iron-stone worker employed in mining hepatite iron ore is reported. In 1919 a radiogram of this patient's lungs showed mottling similar to that exhibited by early cases of silicosis. Five years later the patient died of pulmonary tuberculosis of short duration. On postmortem that part of the lungs examined showed numerous white bulging areas, from which on incision a brown thick purulent material escaped. This material showed numerous tubercle bacilli. Under the microscope the lesions showed much generalized irregular fibrosis, together with necrotic areas. The specimens also showed intense iron staining, particularly around the occluded bronchioles. In this case the irritative condition of the lungs seems to have predisposed to the development of phthisis. The dust inhaled was largely a compound of iron plus a small quantity of quartz. In silicosis of the lung occurring in ganister workers and gold miners there is no question that the inhaled silica particles act as an irritant, setting up chronic fibrotic changes in the lung which predispose to tuberculous infection. In the present case the amount of silica would be small, but the amount of iron-stone dust of a soluble nature exceedingly large, and that this actually became dissolved and permeated the tissues is shown by the iron staining of the specimens. It would seem, therefore, possible that the iron carbonate and oxide had a specific irritating action because of its solubility rather than its inertness.—*A Case of Iron-Stone Phthisis, K. Goodby, Lancet, October 11, 1924, ccvii, 752.—(J. S. W.)*

Treatment of Acute Pulmonary Abscess.—Pulmonary infection is a fairly common postoperative complication, and the accompanying pathological changes vary according to the avenue of infection, the amount, distribution and virulence of the infecting microörganism, the relative resistance of the patient, the length of time the infection has been present, and the treatment. If abscesses result they vary greatly in size and location. They may be simple, multiple, or multilocular. They are usually surrounded by a peripheral zone of pneumonia, which may be circumscribed or extensive, and in various stages of resolution or liquefaction. In the more chronic stages, purulent bronchitis or bronchiectasis usually develops. Long-continued infection results in thickening of the walls of the abscess, of the adjacent pleura, and fibrosis of the lung. For such a variety of pathological lesions there can be no single descriptive term, but "chronic pulmonary suppuration" seems the most comprehensive and adequate. In 692 cases of acute abscess observed at the Mayo Clinic 146 followed operation. Of the postoperative cases, 31 per cent followed tonsillectomy performed elsewhere; 9.5 per cent extraction of teeth; and 26 per cent laparotomy. Abscess in the acute stage following tonsillectomy is typically localized to a circumscribed area of the lung, but may be widely distributed from the onset. From the standpoint of etiology, two facts seem definitely established: that the majority of pulmonary complications following tonsillectomy are due to aspiration infection, and that the great majority of them followed operation under general anesthesia. Indications for treatment must be based in each individual case on the clinical course. Expectant treatment is indicated during an associated pneumonia and in the incipient stage of the abscess in all cases. Expectant treatment is also indicated when there is progressive improvement; also in cases in which the abscesses are multiple and widely distributed. Localized uncomplicated abscesses that do not show unmistakable signs of improvement after a limited time should be treated surgically. The principles involved in surgical treatment are the promotion of drainage through the bronchus, drainage through the chest wall, and extirpation of the diseased portion of the lung. These results are obtained by pneumothorax collapse, extrapleural thoracoplasty, thoracotomy and lobectomy. Operations based on each of these principles have their particular indications.—*The Surgical Treatment of Acute Pulmonary Abscess and Chronic Pulmonary Suppuration, C. A. Hedblom, J. Am. M. Ass., November 15, 1924, lxxxiii, 1577.—(B. T. McM.)*

Intrathoracic Dissecting Abscesses.—The diagnosis of dissecting abscesses of the chest vertebrae is clinically not always possible. Roentgen pictures and fluoroscopy make the diagnosis more certain. In most cases dorsoventral raying suffices, but with smaller abscesses lying behind the heart shadow oblique and transverse pictures are necessary. Intrathoracic dissecting abscesses usually assume a pyriform shape, the widest part lying at the height of the carious lesion. In caries of the lower thoracic vertebrae and the first and second lumbar vertebrae, the abscess not infrequently rises upward. This is against the

hypothesis that caries of the upper lumbar vertebrae must lead to a psoas abscess. It then follows the course of least resistance. The cervical vertebra abscesses can be confused with an intrathoracic struma, but in most cases can be differentiated by absence of pulsation and of response to swallowing. Dissecting abscesses can also originate from the sternum and ribs, and develop strictly intrathoracically. Differentiation from empyema clinically and roentgenologically is not easy. The prognosis of dissecting abscess originating from the vertebrae is grave, with or without operative drainage.—*Über intrathorakale Senkungsabscesse, H. Chaoul and K. Lange, Deutsche Ztschr. f. Chir., 1924, clxxxiv, 348.*—(*H. J. C.*)

Treatment of Acute Empyema.—A combined closed and open method of securing drainage is described: this makes it almost impossible for the external wound to heal and leaves a circumscribed abscess. The closed method is kept up until the cavity holds less than two ounces of air, usually about the end of the second week. This is followed by irrigation until the cavity is closed.—*Acute Empyema Treated by The Combined Closed and Open Method, W. B. Marbury, Med. J. & Rec. November 5, 1924, cxx, 429.*—(*J. B. A.*)

Tuberculosis and Pulmonary Gangrene.—This association of diseases is rare, but should not be entirely neglected. In the prebacteriological period Laennec, Trousseau and others described it. In recent years the only cases published have been those of R. Luriard and M. Renaud. However, in 1912, Veillon and Repaci determined that anaerobic microbic infection of tuberculous cavities is not especially rare, and they isolated the following: B. ramosus and ramosoides, M. foetidus, B. perfringens, streptococcus and staphylococcus, spirillum crassum, vibrio tenuis. These bacteria give certain special characters to the disease. The sputum becomes more abundant, liquid, colored, and brownish, and also very fetid, imparting its odor to the breath. The hectic fever becomes more intense, the facies leaden, the skin sallow or subicteric. Necropsy shows the cavities much broken up, the centres being composed of putrefied tissue, without form, and teeming with bacteria. Outside this is a leucocytic zone, and further outside a peripheral pneumonic zone, within which are tubercles, although these may be absent when there are marked destructive changes. In the case seen by Courcoux and Lelong there was a pulmonary sclerosis with little bronchial and emphysematous dilatations of tuberculous origin. The patient became suddenly febrile, with abundant fetid expectoration, containing anaerobes, and died with symptoms of slowly developing gangrene. Autopsy showed a large gangrenous cavity at the right apex, and through the rest of the lung numerous bronchopneumonic foci around the bronchial dilatations. Tubercle bacilli were not found in the gangrenous lesions, but a characteristic gangrenous flora, B. ramosoides predominating. A truly circumscribed gangrene in pulmonary tuberculosis is unusual; a fetid bronchitis with dilatations less so. The tuberculosis is practically always of fibroid character, sometimes unrecognized. On the other hand, other acid-resisting bacteria than tubercle bacilli may be present, and differentiation may require animal inoculation. It is the gangrene, rather than the tuberculosis, that kills the patient.—*Tuberculose et gangrène pulmonaire, A. Courcoux and M. Lelong, Ve Congrès National d. l. Tuberc., reported in Rev. d. l. Tuberc., 1923, no. 4, 382.*—(*A. P.*)

Tuberculosis and Pulmonary Gangrene.—In the opinion of the majority of phthisiologists the association of tuberculosis and pulmonary gangrene is not a very common occurrence. Laennec showed the relation of pulmonary gangrene to phthisis, in reporting some cases of circumscribed gangrene developed in the walls of tuberculous cavities; but he held that such cases are at least ten times more rare than essential gangrene of the lung. Among 1500 patients suffering from respiratory affections in the Lyon Hospital, 5 showed gangrene associated with tuberculosis. The association may be viewed from three aspects—clinical, pathologico-anatomical and bacteriological. From the clinical point of view the gangrene may follow clinical tuberculosis. In other cases gangrene appears before tuberculosis becomes manifest. Anatomically, the disease may be confined to a circumscribed area in the apex or base, or it may be widespread throughout a lung, or again the tubercles and gangrene may be so interposed that a microscope is necessary to confirm the presence of tuberculosis. From the bacteriological point of view the determining cause is the association of gangrene-producing bacteria with tubercle bacilli. These are usually anaerobic, but they may be aerobic. The flora may present an extraordinary variety. The development of gangrene in an already tuberculous person presents a dramatic picture. The temperature rises, the general condition is profoundly altered, the breath is fetid, particularly after a coughing spell, and the amount of expectoration is much increased and takes on a blackish grey color

and has a repulsive odor. Sometimes, when gangrene develops in a very enfeebled patient, the condition may be recognized only at autopsy. When it develops in a case of latent tuberculosis it dominates the clinical picture. Sometimes, even at autopsy, it is difficult to say which condition appeared first, as the tubercles and gangrenous foci are so intermingled. Tuberculosis associated with gangrene may be present in a diabetic, and be difficult to diagnose. The prognosis is always bad in cases of tuberculosis associated with gangrene. In unilateral cases artificial pneumothorax may be tried, but it is not very hopeful; because of the possibility of the gangrene being contagious it is necessary in sanatorium and tuberculosis clinics to isolate patients developing this complication.—*Tuberculose et gangrène pulmonaire, C. Roubier, Progrès Méd., September, 1924, No. 36, 533.*—(*B. T. McM.*)

X-Ray Treatment of Hodgkin's Disease.—Forty-six cases are reported. *Summary:* 1. Hodgkin's granuloma should be definitely and easily diagnosed from biopsy specimens. 2. Radiation therapy combined with the approved medical treatment offers the best chance of prolongation of life and palliation, with the least inconvenience to the patient. 3. Neither radiation therapy nor any other therapy has ever cured a Hodgkin's granuloma to the knowledge of the authors. —*Radiation Therapy in Forty-Six Cases of Lymphogranuloma (Hodgkin's Disease), B. F. Schreiner and W. R. Mattick, Am. J. Roentgenol. & Radium Therapy, August, 1924, xii, 133.*—(*J. B. A.*)

Differential Diagnosis of Enlarged Heart and Pericarditis with Effusion.—The most important physical signs of pericarditis with effusion are: 1. Signs of dry pericarditis. 2. Downward displacement of the left lobe of the liver. 3. Progressive extension of flatness lateral to either side of the *manubrium sterni*. 4. Extension of cardiac flatness laterally to either side, especially if it extends lateral to a visible or palpable apex beat. 5. Signs of compression of the base of the left lung posteriorly. 6. Demonstration of the actual fluid by the needle or postmortem. Roentgen-ray findings of the greatest help are as follows: 1. Wide shadows enveloping the great vessels at the base of the heart. 2. Absence of pulsation of the left border of the cardiac silhouette. 3. Actual demonstration of the heart shadow within the pericardial shadow. 4. Water-bottle shape of the heart shadow, changing shape characteristically with posture. This finding is of much less value than might be supposed. The roentgen-ray may occasionally help decide the point of selection for paracentesis. This procedure, while not a major surgical one, should not be undertaken carelessly. Any aid as to when and where to puncture is of value.—*Differential Diagnosis of Enlarged Heart and Pericarditis with Effusion, C. W. Perkins and B. Lattin, Am. J. Roentgenol. & Radium Therapy, August, 1924, xii, 171.*—(*J. B. A.*)

Mesothelioma of Pleura.—A case is reported of primary malignant tumor of the pleura, enveloping the heart and producing metastases in the cerebrum and adrenal. Microscopically the cells presented three distinct types, spindle cells of fibroblastic morphology, epithelial-like cells forming channels, and cells producing globules of secretion. Transitions were made out between the three types, giving evidence that the cell of origin was a multipotential cell, which had the ability to differentiate both toward the epithelial and fibroblastic type. Reasons are presented for considering primary malignant tumors of the pleura as being derived from the mesothelial cells of the pleura. Tumors derived from such origin should be considered in a class apart as mesothelioma, and not classified as endothelioma, carcinoma, or sarcoma.—*Mesothelioma of the Pleura, I. T. Zeckwer, Arch. Int. Med., August 15, 1924, xxiv, 192.*—(*B. T. McM.*)

Cholesterinous Pleurisy.—Two cases are reported. It is concluded that such pleurisies are generally of chronic tuberculous nature. The liquid is thick, light chocolate or soup-colored, and microscopic examination shows cholesterin crystals. The blood cholesterin is normal.—*Pleuresie à cholestérine, A. Coyon, N. Fressinger and P. Meignant, Meeting, Soc. Méd. d. Hôp. d. Paris, June 20, 1924, reported in Presse Méd., July 2, 1924, no. 53, 559.*—(*A. P.*)

Syphilis and Tuberculosis.—This study is based on the results obtained and views formed from an investigation into the incidence of inherited syphilis among 100 children admitted to Fife and Kinross Sanatorium. A routine serological examination was made in 100 children, medical and surgical, as they were admitted. It was hoped to determine the incidence of inherited syphilis among 100 tuberculous children; how far syphilis predisposes to the superadded infection with tubercle bacilli; and how far the conditions could be modified by antisyphilitic remedies. Inherited syphilis of itself does not give a positive skin reaction to tuberculin. The literature on the subject is reviewed and the general impression from this is that syphilis

prepares the way for tuberculosis. In this study 11 per cent of the cases had both tuberculosis and syphilis. These cases are described. The incidence of inherited syphilis among a normal child population is 10 per cent. Considering the method of spread of both diseases to be the same, there might be some slight influence favorable to the implantation of tubercle bacilli on a syphilitic terrain. How far conditions can be modified by antisyphilitic treatment depends on the amount of tuberculous dis ase. Potassium iodide can never cure syphilis, but it may open up tissue spaces and allow a further and easier spread of tubercle bacilli.—*Conclusions:* 1. The case against syphilis as predisposing to a subsequent tuberculous infection is not proved. 2. Antisyphilitic remedies must be used with caution.—*Inherited Syphilis and Tuberculosis, W. T. Munro, Lancet, December 6, 1924, ccvii, 1173.—(B. T. McM.)*

Syphilis and Pulmonary Tuberculosis.—The principal point emphasized is the frequent association of fibrous tuberculosis and long-standing syphilis. Sergent cites statistics showing that 71 per cent of cases of fibrous tuberculosis give a positive Bordet-Wassermann reaction. In such cases fibrous arborescences and calcified nodules are numerous throughout the lung fields. A similar tendency to sclerosis is found in organs other than the lungs.—*Syphilis et tuberculose, E. Sergent, V^e Congres National d. l. Tuberc., reported in Rev. d. l. Tuberc., 1923, no. 4, 360.—(A. P.)*

Syphilis and Pulmonary Tuberculosis.—The report comprises 14 cases personally observed, of which 10 were predominantly of the fibrous type and 4 predominantly caseous. In 6 cases in which the syphilis was of recent origin the pulmonary tuberculosis was of grave type in only 2; of 8, in which it was more long-standing, extensive caseation developed in 3, an insignificant difference. These cases were all seen at the Military Sanatorium of Saint-Genis-Laval (Rhone). The most common clinical features of these cases were very slight elevation of temperature, repeated and intractable hemoptyses, good general condition but extensive lesions, fibrocavernous syndrome, and signs of pachypleuritis, thoracic retraction and fibrous proliferation.—*Tuberculose pulmonaire et syphilis associées, 14 observations personelles, Piéry and Mignot, V^e Congres National d. l. Tuberc., reported in Rev. d. l. Tuberc., 1923, no. 4, 372.—(A. P.)*

Syphilis and Pulmonary Tuberculosis.—When these two maladies coexist, experience has shown that the syphilis must be attacked first. One should lose no time in determining the presence of a latent syphilis in tuberculosis patients. A case is cited of a young girl, in whom pneumothorax was induced at the Sanatorium des Pins in 1922 by Hervé, but in spite of a good collapse there was only temporary amelioration, with later reappearance of fever and râles at the opposite apex. The subject was then given 15 injections of bismuth salts, with marked improvement. Questioned closely she admitted having been a victim in 1917 of rape, followed after several months by a spontaneous abortion and by the appearance of undoubted secondary manifestations. One must not, however, be deceived as to the results of antisyphilitic treatment, which are usually incomplete. The hemoptoic forms respond especially favorably, despite the congestive action of arsenobenzol. Also in the case of large syphilitic cavities, specific treatment ordinarily lowers the temperature, causes large moist râles to subside, and favors cicatrization.—*Syphilis et tuberculose pulmonaire, P. Roussel, V^e Congres National d. l. Tuberc., reported in Rev. d. l. Tuberc., 1924, no. 4, 377.—(A. P.)*

Vaccine Treatment of Leprosy.—A Russian Jewess, aged 70, came to Scotland forty years ago from Korno and has lived there ever since. In August, 1923, she was admitted to the Royal Infirmary, Edinburgh, suffering from leprosy. Injections of sodium chaulmoograte were too painful to be continued. As the author had been getting good results in lupus by treatment with vaccines made from tuberculous lymph nodes he had a vaccine made from one of the leprosy nodules. After treatment with this the improvement was very striking.—*A Case of Leprosy Treated by a Vaccine Prepared from a Nodule from the Patient's Arm, N. Walker, Lancet, September 3, 1924, ccvii, 542.—(B. T. McM.)*

Afibrinogenaemia and Tuberculosis.—This is a report of a case of tuberculosis in a child of three years who had repeated hemorrhages from different parts of the body, the blood in which failed to clot.—*A fibrinogenämie und Thrombopenie infolge ausgedehnter Hepatico-lienaler Tuberkulose, H. Opitz and M. Silberberg, Klin. Wchnschr., August 5, 1924, iii, 1443.—(H. S. W.)*

Tuberculosis in Equatorial Africa.—Equatorial Africa includes also the territory lying in both tropics. The information concerning the French colonies has been furnished by a large number of colonial physicians and gathered by Calmette (1911–

1912) and Kérandel (1922). In the Sudan, the disease must have been introduced long ago by caravans coming from Northern Africa and crossing the Sahara. The endemic index is low in the interior, reaching at maximum 5 to 7 per cent. It is much higher in the European centres. *Senegal:* The Pirquet skin reaction shows 15 per cent positives in children. The disease is seen especially in these centres: Saint Lous, Gorée, and Dakar, 38 to 49 per cent in the schools of Dakar being infected (Leger). The ulcerocaseous forms are commonest. Animal tuberculosis, in cattle, swine and zebus, is rare (Curasson, Teppaz). *Guinea:* The index of infection is only 5 per cent. Tuberculosis exists especially in the relatively cold mountainous region of Fouta-Djalon. The skin reaction shows only 1.8 per cent positives. *Coast of Ivory:* The mean index is 8.4 per cent. *Dahomey:* The coastal regions are most affected. A savage race living in the lake region shows an index of 33 per cent infected. *Haut-Sénégal-Niger:* The women show an index of 27.5 per cent, the men 7.8 per cent infected. Subjects of Moorish descent are infected five times as much as the autochthonous Sudanese races. *Cameroun:* Pulmonary tuberculosis is rare. Bony, articular, and glandular forms, however, are met with. The highest incidence of infection is found in emigrant Hottentots (40 per cent) and Syrians (42 per cent). There is no bovine tuberculosis. *The Congo:* Tuberculosis follows closely the penetration of European civilization. It did not exist prior to the twentieth century. Autopsy records now show 36.7 per cent infected in the Belgian Congo (Monchet), mostly very acute forms, together with intestinal and miliary tuberculosis. The skin reaction gives 7 per cent positives among workers in the industrial centres, as compared with 1 per cent in localities rarely visited by Europeans. Bovine tuberculosis is absent. The Belgian government has adopted the following measures: (1) prohibition of entrance of tuberculous individuals into the colony, (2) compulsory notification, with medical supervision of all cases, and (3) inspection and control of herds, and regulation of the sale of milk and other products which might transmit the disease. *British Territories. Sierra Leone and the Gold Coast:* Tuberculosis is developing in these countries. Compulsory notification, isolation and disinfection were introduced in 1917. *Nigéria:* The disease makes slow but steady inroads. It is more frequent in Southern than Northern Nigeria. *Rhodesia and Southern Territories:* The disease seems widespread in the mines. It has also been introduced into Nyassaland by mine workers from South Africa. *Tanganyika:* Tuberculosis is unknown among the natives but has been imported by Arabs, Somakis, and especially Hindus. It pursues a rapid course. *Zanzibar:* The disease prevails chiefly within the city of Zanzibar, overpopulated, and with poor hygienic conditions. *Kénya, Uganda and Somaliland:* Tuberculosis is prevalent chiefly in the coastal region. It is widespread among the Somalis, and autopsies show 17 per cent of infections at Nairobi and 39 per cent at Mombasa. In Uganda it is rare, but J. H. Cook has observed several cases in a tribe of nomadic shepherds. *Anglo-Egyptian Sudan:* Balfour, Cummins, and Archibald have shown that tuberculosis exists chiefly in the cities, where the Sudanese are very susceptible, and one sees involvement of the lungs and pleura, as well as adenitis. *Spanish and Italian Colonies:* No information. *Portugese Colonies:* There are numerous victims in Angola, especially the city of Loanda, and the disease is widespread near Lourenco-Marquez, in Mozambique. *Abyssinia:* There is little information, but the lymphatic forms seem to be especially common.—*La tuberculose (et la maladie du sommeil) en Afrique équatoriale, C. Joyeux, Presse Méd., September 24, 1924, no. 77, 1615.*—(*A. P.*)

Statistics on Tuberculous Infection.—In Hegra, Norway, tuberculin skin tests on 88 children were positive in only 14, or 15 per cent. From seven to ten years of age only 6 per cent were positive, as compared with 75 per cent in Vienna for children of the same age: from eleven to fourteen years, 20 per cent were positive in Hegra and 95 per cent in Vienna. Of the 14 positive reactions in Hegra, close contact with tuberculosis had existed in one-half. Most of the children reacted to the first test. Moro's percutaneous test was used. Of 23 Norwegian soldiers from various sections of the country, 22, or 95 per cent, reacted.—*Beitrag zur Statistik der Tuberkuloseinfektion, Johanna Mayrhofer-Grünbühel, Wien. klin. Wchnschr., August 14, 1924, xxxvii, 803.*—(*H. S. W.*)

Care of Tuberculosis in Lancashire.—To provide for the care and after-care of tuberculosis in the Lancashire County Council (England) 17 committees have been organized with the following objects: 1. To assist in the purchase of clothing which patients need when they go to a sanatorium or hospital. 2. To provide food and clothes for poor patients who are receiving treatment at home. 3. To give assistance (in kind) to dependents, so as to enable patients for whom institutional treatment has been

recommended to take advantage of the opportunities provided under the County Scheme. 4. To assist patients who are sufficiently recovered to obtain suitable employment. 5. To give suitable advice and encouragement to patients and their friends, and generally to assist the dispensary staff in the enlightenment of the public both as to the laws of health and the facilities for treatment. The methods of organization of the committees and of securing funds, and the relation of the work to Poor Law relief are described. A plan to extend the work to the entire population of the County is given.—*Care Work in Lancashire, G. I. Cox, Tubercle, January, 1925, vi, 174.*—(*J. B. A.*)

Tuberculosis Work in Denmark.—The Danish scheme comprises, on the one side, generous provision of sanatoria, dispensaries and hospitals, combined with educational propaganda, as in Wales and England, and, on the other side, a thorough supervision of the milk supply. The rigorous prosecution of the campaign on these lines has been followed by a fall in the death-rate from all forms of tuberculosis from 2.8 per 1,000 in the quinquennium 1890–1894, to 1.5 in the quinquennium 1910–1914, and to 1.01 for the year 1922. Denmark has now the lowest tuberculosis rate in Europe. The wholehearted recognition of the curative value of ultraviolet light in nonpulmonary tuberculosis is evidenced by the possession, even by small country-town hospitals, of carbon arc light installations. At present, at the Finsen Medical Light Institute, the number of cures in cases of lupus of less than four years' standing reaches the figure of 92 per cent. In a series of 100 cases of tuberculosis of the larynx treated by general arc-light baths, 53 patients were reported cured, in 34 instances by light baths alone, and in 19 instances by light baths plus surgical treatment. At Kelvebod Bastron there is an estate, in which tuberculous patients awaiting admission to, or after discharge from, sanatoria can spend the day from 9 A.M. to 7 P.M. There is also a well-organized scheme, originating with the Teachers' Union, by means of which children of the metropolis are sent into the country for their summer holidays, which last about six weeks.—*Certain Features of Tuberculosis Work in Denmark, F. T. H. Wood, Brit. J. Tuberc., January, 1925, xix, 16.*—(*J. B. A.*)

Antituberculosis Measures.—The advent of artificial pneumothorax has lessened our helplessness in the face of pulmonary tuberculosis, yet this method, so fruitful in immediate and definite results, is too often disappointing. Hervé believes the reason is that it is relied on too far, to the neglect of the old rational therapy. The clinician visiting a consumptive patient should not forget that the affection now revealed is probably of long-standing origin, and represents a pitched battle in the ancient war against the infection. Collapsing the lung will not at one stroke suppress all traces of tuberculosis and restore normal function. In addition to the ever-present possibility of the disease progressing in the lungs, secondary manifestations are liable to occur elsewhere, such as meningitis, bacillary nephritis, epididymitis, peritonitis, etc. A well-ordered rest cure, combined with proper hygienic-dietetic treatment, is all the more efficacious after pneumothorax. Fresh air must not be neglected. Neither are climatic advantages to be ignored. Heliotherapy may well supplement the hygienic treatment, and the disappearance of fever under it is by no means exceptional. In addition to accelerating the drying up of pulmonary foci it induces better nutrition and muscular tone. However, congestive and progressive patients are best kept in the plains until their temperature is reduced. When the symptoms of activity slacken, all pulmonary and especially pleural cases may be taken to higher ground. As a further aid may be mentioned sulphurous waters, both externally and internally, which are of particular benefit in the sclerosing pleural forms, as well as in bone tuberculosis. Probably all suppurative (ulcerative ?) cases of pulmonary tuberculosis and all rapidly progressive forms should have pneumothorax. Where collapse is unsatisfactory due to bands of adhesions, these may be divided. But, beyond surgical measures, the simple fundamentals in tuberculosis therapy, rest, open air, and sunshine must never be overlooked.—*Anticonsumptive Therapeusies, R. Hervé, Lancet, January 17, 1925, ccviii, 124.*—(*A. P.*)

Antituberculosis Campaign in United States.—This paper was prepared by the staff of the National Tuberculosis Association for the Tuberculosis Society of Great Britain in March, 1924. Under subheadings the early history of the work in the United States is recounted, and movements and ideas are described which culminated in the organization of the National Association. The subsequent campaign for organization on a wide scale and for the establishment of state and local agencies, and especially the scheme of financing with the Christmas seal and of distributing funds derived therefrom are discussed. A typical state programme is presented. The trend toward broader activities within the tuberculosis field, and

beyond it, in association with other organizations constituting the National Health Council is noted. The relation of the official and nonofficial agency is outlined, contrasting especially conditions here and in Great Britain: it is not anticipated that a centralized federal agency such as the Ministry of Health of England will ever exist in the United States. *Conclusion:* The campaign against tuberculosis in the United States organized, as it is, upon a state and local basis, differs naturally from the organization of the British tuberculosis schemes centralized in a Ministry of Health. Whereas in England the emphasis is upon the local character of the problem, because of the magnitude of the country, traditional influence of various kinds, and historic development, the campaign in the United States has of necessity assumed certain national and state proportions which are more or less foreign to schemes of this character in many other countries. The declining death-rate in the United States seems to have been accelerated by the activities of the tuberculosis associations, according to the best authorities available. In 1900 the death rate for tuberculosis in the registration area of the United States was 195.2 per 100,000 population. In 1910, when the organized movement in the United States had barely got under way, the rate had declined in the same area to 164.7, or 15.6 per cent. In 1920 the rate in the same states had dropped to 112.0, or 42.6 per cent below the 1900 figure. In the second decade from 1910 to 1920, the rate fell 32 per cent, or a little over twice as fast as in the first decade. In 1921 the rate fell to the remarkably low figure of 94.2 per 100,000, and indications are that the reported rates for 1922 and 1923 when available will be lower yet for these states. There is, therefore, every reason to believe that the campaign against tuberculosis in the United States has been organized on sound lines. The results locally and nationally seem to bear testimony to this fact. We look forward to the time when tuberculosis shall become, as Trudeau believed it would be, a relatively minor cause of death and sickness.—*The Campaign against Tuberculosis in the United States, R. C. Matson, Tubercle, November, 1924, vi, 74.*—*(J. B. A.)*

Incidence of Tuberculosis, and Rainfall in India.—India presents very favorable conditions for a study of the incidence of tuberculosis in relation to climatic conditions, for this large country shows extremes of rainfall from 500 inches on the south side of the Khasia Hills of Assam to 5 or less in Northwestern India. It also affords splendid meteorological records, and reliable data regarding the incidence of phthisis in the jail population. For the purposes of this present inquiry the phthisis rates of all jails for ten consecutive years have been worked out. *Conclusions:* The direction, steadiness, and strength of the rain-bearing winds appear to be the most important factors, in addition to high rainfall and absolute humidity, in influencing the prevalence of pulmonary tuberculosis in Indian jails. These observations are in accordance with those of G. W. Gordon of Exeter on the relations between exposure to humid winds in Devonshire and the incidence of phthisis, and afford their strong support on a very large scale, since the monsoon-influenced Ganges and Upper Indus Valleys extend over 1,400 miles. Their bearing on the choice of a residence for an actual or potential phthisical patient and on the choice of sites for sanatoriums is obvious.—*Tuberculosis Incidence and Climate in India: Rainfall and Wet Winds, L. Rogers, Brit. M. J., February 7, 1925, no. 3345, 256.*—*(B. T. McM.)*

Industrial Tuberculosis.—The most important form of industrial tuberculosis is that in which the inhalation of industrial dusts has played a predisposing and determining part. The influence of atmospheric dust upon health varies even more with the kind than with the gross amount of dust which may be present. Coal dust and cement dust, when inhaled in considerable amounts, appear quite definitely to favor acute respiratory infections, such as bronchitis and pneumonia, but, if anything, they tend to diminish liability to tuberculosis. Silica dust, on the other hand, has a peculiar and characteristic influence in predisposing the tissues to the invasion of the tubercle bacillus. How far this may be due to the fact that silica particles are less rapidly eliminated from the lung tissues than are carbon particles, and, therefore, produce more far reaching fibrotic changes through their irritating action, how far to some specific influence of silica on attracting or fixing tubercle bacilli in its vicinity, is not known. The end-result, however, is beyond dispute, as is clearly shown by vital statistics of sand-blasters, granite cutters, polishers and grinders, and other workers exposed to siliceous dusts. The city of Barre, Vermont, in the centre of the granite-cutting district, showed for a ten-year period a tuberculosis death-rate more than 250 per cent that of Vermont as a whole. In an axe factory in Connecticut the men employed in grinding and polishing suffered from a tuberculosis mortality over 1180 per cent that of their fellow employees in the same factory not

exposed to silica dust. In this group there is an annual death rate of 17 per 1000 as a direct result of industrial tuberculosis. To overcome this problem what is needed is: 1. The discovery of the factories where dust hazard exists. 2. A study of conditions by competent analysts for the determination of the actual dust content of the air. 3. The development of protective measures such as the use of enclosed or moist processes, local exhaust ventilation, or the provision of masks and respirators.—*Indust ial Tuberculosis, C.-E. A. Winslow, Boston M. & S. J., January 29, 1925, cxcii, 215.*—(*B. T. McM.*)

Phthisis and Industrialism.—"Mortality represents the end result of reaction to environment" and may be altered either by changes in environment or in the resisting power of the body. Mortality from tuberculosis is a delicate barometer, which indicates the causes that contribute to the total mortality of a people. Mortality incidence from all causes is high in the first year of life, then falls rapidly to age fifteen, rises gradually but steadily thereafter until about age fifty-five, and from this point the gradient rises more rapidly to the end of life. Tuberculosis mortality is high in the first year of life, then tapers off in childhood, but the rise after this period is not continuous; it reaches a peak and later drops toward old age. Statistically and clinically, tuberculosis is seen in three main types: (1) an acute generalized disease, such as is seen in infants or primitive tribes, (2) a moderately acute, usually localized (lung) disease of the type commonly seen in early adult life, and (3) a chronic disease of the lungs, localized, such as is seen in older adults. It cannot be determined whether the acuteness of the disease among primitive races is due to a lack of previous contact with the disease or to the fact that the civilized people who carry the disease to the peoples in question cause sudden and profound physiological changes in the lives of the latter (clothes, food, habits, etc.), and these changes render the body more liable to the rapid inroads of the disease. It may be deduced from mortality statistics that death in early adult life represents a general condition of "malnutrition," while death in late middle life represents a "resistance lowered by wear and tear." Rates in different countries are interesting. In Sweden in the latter half of the 18th century the rate was highest at sixty-five years or above, with the males higher than the females, but the maximum of both sexes is at the same age period. Within the last fifteen years the age maximum is twenty to twenty-nine. In Australia in the last sixty years the death rate has fallen markedly from its already low point and the decline has been greater in women than in men. The maximum incidence in Prussia was 60 to 70 years in 1877, although there were peaks in the curve at 20 to 25 and 25 to 30. Individuals tend to die of tuberculosis at the rate that is distinctive for that age. In this country in 1868 (New York) the maximum incidence for males was at ages 65 and above, the second highest point being from ages one to five. In 1920 the maximum incidence was 55 to 59, and in 1900 it was 45 to 49. In 1868 the male mortality was greater than the female except in the age period 15 to 19 years; in 1921 the female was in excess of the male up to age 20. In 1868 the two sexes were reacting alike (curves were similar). In the last fifty years the total male mortality was reduced by 79 per cent, with the fall at the two extremes of life, while the total female mortality fell by 83 per cent and the fall was as it was in the males. As to environment and racial stock, it appears that the mortality for both male and female Irish immigrants to this country from the age of 45 onward is higher than that in the country of birth. Among British immigrants to this country the mortality is lower than that for the age and sex in the country of birth. The Jews show a late age of maximum incidence. Statistics from these and various other countries indicate the following: 1. In Sweden a century ago tuberculosis was endemic in a population living a hard life with the strain heaviest for adult males, while industrialism increased this strain in earlier life, particularly for females. 2. "In food-producing Australia the phthisis mortality has throughout been comparatively low, and the strain on life has been greater for males than for females." 3. Prussia, previously nonindustrialized, had mortality rates similar to those of Sweden, and, with industrialism, reacted as did that country. 4. In the United States, the strain of life was great on both sexes fifty years ago, but industrial Massachusetts showed "a malnutrition effect;" with ease of strain and increase in food consumption, rates have fallen. While the colored population shared the environment of the whites their rates were similar; later the freed negro developed higher rates. 5. Czechoslovakia has a mortality similar to that of England and Wales in 1850. 6. Japan's is similar to Sweden's. 7. Adult female rates are in excess of male rates only where an industrial environment demands the energy output of females.—*Phthisis and Industrialism* (*National and Occupational*) *with Reference to Other Infec-*

tious Diseases, The Harben Lectures 1924, Lecture I, E. L. Collis, J. State Med., March, 1925, xxxiii, 101.—(H. S. W.)

Methods of Spread of Tuberculosis.—Flügge's theories of direct contact and droplet infection, will, by the great care and ingenuity of method employed in working out the experiments, remain as standard although the work of Cornet emphasized the danger from inhalation of dust-containing dried tubercle bacilli that have come from a coughing or spitting consumptive. Recent work of Lange, who showed that after feeding very small amounts of tubercle bacilli to guinea pigs the latter developed disease, speaks against inhalation as the sole method of infection. Lange showed that after feeding 0.00001 mgm. of bacilli 25 per cent of the animals developed tuberculosis. If such small doses can set up disease, then we cannot rule against such an avenue of infection in clinical cases. Besides, bacteriologists have too often disregarded the fact that, through heredity or otherwise, individuals vary greatly in their capacity to meet and react to infection. Bacilli found in lymph nodes often have a low virulence. It is possible that tubercle bacilli which enter the body through the lungs may set up disease, but may also establish a high immunity. This seems reasonable from recent studies in syphilis, in which spirochetes which enter through intact conjunctiva or vaginal mucosa set up but slight manifestations of disease as compared with the degree of disease established by testicular infection. Children may be infected often through the mouth, nose or conjunctiva, but such infections need not be serious. There are numerous inhalations of tubercle bacilli during life, and it is conceivable that the first bacilli inhaled keep their original virulence and establish a local immunity of the lung, but it is more likely that those bacilli which enter the body through the laryngeal or intestinal mucosa lose some of their virulence by such passage, and set up a different disease, such as tuberculosis of the lymph nodes. Therefore, the inhalation of tubercle bacilli is important in the epidemiology of tuberculosis.—*Ueber einige neue Gesichtspunkte zur Verbeitungsweise der Tuberkulose, F. Neufeld, Deutsche med. Wchnschr., January 2, 1925, li, 7.—(H. S. W.)*

Conjugal Tuberculosis.—The generally accepted opinion has been that conjugal infection seldom occurs. It is apparent from a review of the literature that a great lack of unanimity exists as to its frequency, the manner of infection, and the morbidity of the disease in the two partners. When one considers the apparent facility for infection of the sound partner when the other is suffering from open phthisis, the most remarkable feature of the problem is the number who escape, or at least do not die from the disease, especially when we remember that the sound partner passes a large part of the day and often the whole night in close proximity to the sick one. There is evidence to show that the risk of infection is slight, even in those cases in which practically no precautions are taken against it. The explanation is that by the time men and women have reached the marriageable age they have passed the age of greatest susceptibility, which is during childhood. While some workers, such as Roussel and Ward, believe the most important factor in the production of marital infection is the sowing of the seed, Pope finds that two-thirds of the infection is due to the seed falling upon a suitable soil that is, to a tuberculous diathesis. In the decennium, 1911–1920, there were 1,242 deaths from phthisis in Northampton. Of these, 525 were married, 562 single, 49 widowed, and 106 state unknown. In this number there were only 15 instances in which both partners had been certified as having died from phthisis, and it is necessary to reject one couple as the source of infection as too doubtful to be included among the cases of genuine marital infection. Therefore, for this decennium it may be said that one partner infected the other in only 2.7 per cent of the cases. This figure for the amount of contagiousness among the married couples of Northampton varies little from the generally accepted figures for the clinical tuberculosis rate for the general population. *Conclusions:* 1. Conjugal tuberculosis is rare. 2. The death-rate from phthisis of the spouses of tuberculous persons varies little from that of the general population of a corresponding age. The phthisis death-rate for Northampton, 1911–1920, was 1.4. For England and Wales during the same period it was 1.1. 3. Ideal conditions for infection exist, but infection rarely occurs, owing to the age of greatest susceptibility having passed by the time the marriage age is reached. 4. These findings support the view that infection usually occurs during childhood; hence the advisability of protecting children whose parents are suffering from open phthisis. On these lines the Grancher system is founded, and is being worked successfully in France. 5. When conjugal infection does occur the disease usually runs a short course.—*Conjugal Tuberculosis, S. Rowland, Lancet, December 3, 1924, ccvii, 1224.—(B. T. McM.)*

Tuberculous Diathesis in Diseases of Nervous System.—The development of focal lesions in various parts of the body in the course of tuberculosis seems to be governed by two facts: (1) the distribution of vessels, especially arterial, and their terminal branches; and (2) structural modifications due to the presence of the tubercle bacillus and its toxins. In the studies reported, search for bacilli was made by the Ziehl-Neelsen method, and guinea-pig inoculation of the tissues was performed. *Case 1:* A fisherman, aged 62, with well-marked pulmonary tuberculosis, who noticed movements of the left shoulder and shaking of the head, either alternating or coinciding. There were also contractions of the left pectoralis major, and of the neck and facial muscles, especially the omohyoid. There were no sensory or reflex disturbances. There was pain in the shoulder, and the left wrist and supraspinous fossa were hyperesthetic. The patient died and at autopsy there were found deep-seated pulmonary tuberculosis and intestinal ulcerations. The nerve trunks of the brachial plexus were injected into the peritoneum of a guinea pig, and the animal was found riddled with tubercles containing tubercle bacilli. This furnishes proof of the peripheral localization of the bacillus in the branches of the brachial plexus, giving rise to a myoclonic syndrome. *Case 2:* A hospital attendant, aged 44, admitted with febrile and hemoptoic pulmonary tuberculosis. He had lost his eye at 17, following a revolver shot in the temple. Since the age of 26 he was subject to epileptiform crises. The left upper phrenic point was painful. He was confined to bed, and collapsed suddenly on attempting to go to the toilet, dying within three minutes. At autopsy there were found tuberculous infiltration of the lungs, a voluminous heart with soft vegetations on the sigmoid valves of the aorta, and the brain showed at the base of the right orbit a depression, where the cerebral substance seemed soft and gelatinous. This focus was 4 cm. in diameter, of yellow ochre color and occupied the inferior frontal region. Near its outer margin were found masses of tubercle bacilli, and these were also found in the vegetations on the aortic valve. This concomitant infectious endocarditis may explain the sudden death. *Case 3:* A mechanic of alcoholic history, suffering from pulmonary tuberculosis with bacillary sputum. He also had involuntary movements of flexion and extension of the last fingers of the left hand and clonic movements of the left arm, with grimaces of the left side of the face. These crises would be followed by paresis of the arms, lasting an hour. There was noticeable awkwardness of the left hand, and adiadokokinesis. Later the movements extended to the right thigh and leg, and exaggerated reflexes and ankle clonus appeared. Gradually the crises were replaced by muscular tremors. The eye grounds were negative. Autopsy showed tuberculous lesions of the lungs, especially the right, and intestinal ulceration. The brain showed a vast focus of softening in the upper part of the right sensori-motor area. There was practically a crater of three fingers' breadth situated behind the convolutions of the fissure of Rolando, and limited below by the fissure of Sylvius. A fragment of brain tissue near and partially including the softened area showed tubercle bacilli on guinea pig inoculation. *Case 4:* A carter, aged 64, of alcoholic history, experienced crises of violent pains over the sternum and epigastrium, sometimes with vomiting. A tremor of the upper limbs was noticed, with Parkinsonian movements of hands and fingers. The tremor could be arrested by effort. At autopsy disseminated small tubercles were found throughout the intestine and abdominal organs, containing bacilli and giant cells. There was a small localized diaphragmatic abscess and a few tubercles at the base of the left lung. The brain showed, in the left temporal region, a small superficial abscess the size of a pea. This seemed to extend into the caudate nucleus. Tubercle bacilli were found in this as well as the diaphragmatic abscess, also in the spleen and lymph nodes. The cerebral abscess, apparently embolic in character, had largely destroyed the nerve elements. *Conclusions:* 1. The bacillary (tuberculous) diathesis may invade the nervous tissues by dissemination or the formation of discrete foci. 2. It may give no sign or may cause profound functional disturbances, such as myoclonia. 3. Among its manifestations may be epileptoid trepidation, exaggerated reflexes, Jacksonian epilepsy, or tremors. 4. There is a relation between nervous lesions and allergic phenomena.—*Contribution à l'étude de la diathese bacillaire dans les maladies du système nerveux, E. Lenoble, Rev. d. l. Tuberc., October, 1924, v, 606.*—(*A. P.*)

Roentgenographic Diagnosis of Miliary Tuberculosis in Infants.—Instantaneous roentgenographic exposures of the chest are important in establishing the presence of miliary tubercles in the lungs of infants. A diagnosis was made by this means in a child of two and a half years. The symptoms were loss of weight and cough, cyanosis, dyspnea, and auscultatory signs of the real condition were absent.—*Impo tance*

de la radiographie instantanée du thorax dans le diagnostic de la granulie de l'enfant, Mouriquand, Chassard and Sédallian, meeting, Soc. Méd. des Hôp. de Lyon, December 2, 1924, reported in Presse Méd., December 13, 1924, no. 100, 998.—(J. B. A.)

Tuberculous Meningitis Following Adenoidectomy.—A baby, three months old, five days after removal of adenoids, presented symptoms of tuberculous meningitis to which it succumbed fifteen days later. This child, since birth, had been living in contact with her grandfather, an old bronchitic harboring a latent tuberculosis.—*Ablation de végétations adénoides suive de méningite tuberculeuse, Rouèche, Congrès des Pediatres de Langue Française, October 1, 1924, reported in Presse Méd., October 22, 1924, no. 85, 834.—(B. T. McM.)*

Tuberculous Antibodies in Infected Infants.—An attempt was made to determine whether tuberculosis acquired by newborn children or nurslings prevents the disappearance of antibodies transmitted by the mother; ordinarily these are not demonstrable after the third month. It was found that acquired tuberculosis has no such effect; neither does it modify the duration of these antibodies in the organism. When acquired tuberculosis develops after the disappearance of the transmitted antibodies, it is not followed immediately by the elaboration of new antibodies. These reveal themselves but slowly, not usually before the age of eighteen months, and only to a slight extent.—*Les anticorps tuberculeux au cours de la primo-infection du nourrison, R. Debré and M. Lelong, meeting, Soc. de Biologie, December 20, 1924, reported in Presse Méd., December 24, 1924, no. 103, 1030.—(J. B. A.)*

Transmission of Tuberculous Antibodies from Mother to Child.—The complement-fixation test for tuberculosis was performed 35 times with blood from the umbilical cord, 32 times with corresponding maternal blood, as well as with the blood of 69 nurslings, born of tuberculous mothers, and separated from them since birth or, in every case, before contamination. The reality and frequency of transmission of tuberculous antibodies from mother to infant were verified. Furthermore, it was determined that this passage is not a simple filtration. The placenta may hold back the antibodies completely or partially; it may permit their passage without any alteration in concentration; but, more important, it seems rather frequently to have the property of concentrating and reactivating the antibodies, causing them to appear in the blood of the cord in higher proportion than in the maternal blood, or when there is little or no evidence of them in the maternal blood. These transmitted antibodies do not persist in the blood of the newborn; they disappear spontaneously in a few weeks. Infants examined under the above conditions and giving a positive fixation reaction do not react to tuberculin. In those who died, no macroscopic or histologic evidence of tuberculous lesions was found, and inoculation of the viscera was negative in all cases in which this was done. —*Transmission des anticorps tuberculeux de la mère à l'enfant; concentration et retroactivation au niveau du placenta, R. Debré and M. Lelong, Meeting, Soc. de Biologie, December 6, 1924, reported in Presse Méd., December 10, 1924, no. 99, 986.—(J. B. A.)*

Artificial Pneumothorax in Infants.—This is a report of two cases of children, aged fifteen and ten months, respectively, in whom artificial pneumothorax was induced for tuberculous infiltration of the left upper lobe. The results were most satisfactory. Another child, submitted to the same treatment after the repeated finding of tubercle bacilli in the sputum, was apparently cured at the end of a year even though the treatment had to be abruptly discontinued.—*Pneumothorax therapeutique dans la tuberculose chez les jeunes enfants, Armand-Delille, Congrès des Pédiatres de Langue Française, October 1, 1924, reported in Presse Méd., October 22, 1924, no. 85, 834.—(B. T. McM.)*

Pulmonary Tuberculosis in Children.—Tuberculosis of the adult is usually a reactivation of an infection in childhood. Consequently, all efforts at prevention should begin in childhood. Tuberculosis in many resepects resembles syphilis. In both there is a primary focus of infection constituting the first stage, the primary lung focus of Ghon corresponding with the chancre: then in a short time involvement of the lymphatic system and spread of the bacilli throughout the body takes place,—the secondary stage: at a later period and often years afterwards, destruction of tissue takes place in both. Pulmonary tuberculosis, which is the main source of infection for all kinds of tubercle, is in the great majority of cases due to tubercle bacilli of the human type, which enter the tissues through the respiratory passages. There are three main varieties of pulmonary tuberculosis in children corresponding to the pathological types of miliary, fibroid and fibrocaseous disease. Clinically, they are often termed (1) acute general or infantile, (2) hilum or juvenile

tuberculosis, and (3) adult types. Tuberculosis in infancy runs a course like that of an acute infectious fever, with a marked tendency to generalization, somewhat resembling inoculation tuberculosis in animals. Infection seems rapid and easy, the bacilli reproduce quickly, and are carried by the blood stream throughout the whole body. The bronchial lymph nodes are invariably involved and caseous, with disease spreading outward from the roots to the periphery, both apex and base being affected. In the first year of life there is little tendency for the disease to heal. Progressive caseation occurs, then dissemination, and miliary tuberculosis or meningitis is a frequent termination. Tuberculous meningitis is the cause of death in nearly half the cases of tuberculosis in childhood. Tuberculosis is more fatal in infancy than at any other age, and more fatal in the latter half of the first year and during the second year. Many deaths certified as due to bronchitis or pneumonia are really due to tubercle. It is highly significant that the death-rate from bronchitis in the United States is only one-seventh of the English death-rate from the same cause. In the general or infantile type the usual clinical form is acute miliary tuberculosis. A subvariety, frequently unrecognized, is tuberculous bronchitis, seen in infants under five years of age, especially in homes where there is an open case of pulmonary tuberculosis. Tuberculous bronchopneumonia or caseous bronchopneumonia is probably the most common form of pulmonary tuberculosis in infancy. When the child reaches school age the disease enters a new phase, passing into more latent and chronic forms, with a lower death-rate between the ages of 5 and 15 than at any other period of life. *Paths of infections:* According to Kuss the primary focus is a small tubercle usually situated subpleurally, but often intraparenchymatous. Usually only one such focus exists, and the size varies from a pinhead to a hazel nut; it is well defined, often enclosed in a fibrous capsule, and consists of dry and hard or soft caseous masses. The bronchial lymph nodes draining the area in which the lung focus originates nearly always become tuberculous, but these cannot usually arrest the bacilli, and infection progresses to the lymph nodes in the mediastinum. These latter are the first barrier against the progress of infection. This first stage of infection usually remains passive. But the infection may spread farther, and in time ends in a clinically recognizable form of tuberculosis in which the lungs are affected by a retrograde movement. Albrecht, in a series of 1,060 autopsies, studied the primary focus, which he represented as isolated, usually round, of varying size, often caseous, and containing in the centre a thin fissure as a remnant of the caseous bronchiolus. There was usually only one focus. It may appear in any part of the lobe, and by fresh tubercles at the periphery may attain to the size of a cherry or larger. Corresponding to the primary infection are caseous tracheobronchial lymph nodes, which correspond to the side of the lung focus, or at least show more advanced lesions than on the other side. These results are confirmed by Ghon, and they all claim that the primary infection of the lung is aerogenous. If resistance is low the disease spreads outward from the affected lymph nodes giving rise to hilum tuberculosis or the *ganglion pulmonaire* of the French. Hilum tuberculosis and adult types are described.—*Pulmonary Tuberculosis in Childhood, J. A. Watt, Lancet, December 27, 1924, ccvii, 1327.*—(*B. T. McM.*)

Chronic Pulmonary Infiltration in Tuberculous Children Disappearing after Several Months.—Pulmonary tuberculosis occurring in infancy and childhood is generally considered to be of a particularly severe type. Two exceptional cases are cited, of infants of sixteen and twenty-one months, who showed extensive pulmonary infiltration, lasting several months and disappearing entirely, the children remaining in good health after three and four years, respectively, presenting merely the signs of a tracheobronchial adenopathy. Observations of a similar kind have been published by Armand-Delille, who uses the term *chronic tuberculous splenopneumonia*, Eliasberg and Neuland, who call them *epituberculous infiltrations*, and Ribadeau-Dumas, who considers them a curable form of "gangliopulmonary tuberculosis." Certainly the picture is that of a special type of chronic pulmonary infiltration, benign in course and occurring in tuberculous children. These observations show that not every chronic lesion of the lung in children, even though very extensive, implies a fatal prognosis, and that they may disappear without leaving any trace. *Case 1:* A child of twenty-one months was boarded out since six months of age with a family, the father of which had open pulmonary tuberculosis. The child was thin, pale and flabby, but had no fever. There were numerous enlarged submaxillary and cervical lymph nodes. Examination of the lungs revealed marked dulness over the left upper lobe, with marked diminution of the respiratory murmur. The abdomen was fat and flabby, the spleen a little enlarged. The tuberculin skin reaction was strongly positive. A radio-

gram of the chest showed a uniform, intense shadow over the whole upper half of the left hemithorax. Repeated punctures of this area were without result in obtaining fluid. About six weeks later the opacity involved the entire left lung field, except for a little oval clearing in the upper part. Later there was noted tubular breathing, also fine râles posteriorly. Treatment by the quartz lamp was instituted after two weeks more, when there was a little clearing at the base. A slight degree of fever was observed, but the general condition was good. Several months later the dulness was noted to be less and the râles very few, and after another month there was only a slight impairment of resonance over the upper chest, with normal breath sounds and no râles. A new roentgenogram showed only a perihilar shadow, the rest of the field clear. Four months later, however, the signs and shadow reappeared, and there were some chest symptoms. These persisted to some degree, with occasional subfebrile rises, for almost a year, when they again gradually disappeared. The patient since passed through whooping cough, scarlet fever and measles without recrudescence. *Case 2:* An infant of sixteen months, after having developed an otitis media, was sent by an otologist for a general examination. The tuberculin skin test was positive. A roentgenogram showed a dense homogeneous shadow of the left upper lobe. There was no fever, and the general condition was good. A second picture a month later showed slight clearing at the apex, which gradually went on until, after a year, only an interlobar band was visible. In this case the source of infection was a domestic servant The only subsequent tuberculous manifestation has been an abscess of the cervical glands. *Discussion:* This type of affection occurs only in tuberculous children presenting signs of hilar adenopathy. Eliasberg and Neuland have met with it only in the first three years of life, although Armand-Delille has seen it in children of eleven and twelve years. The onset is insidious, afebrile or subfebrile. Cough, loss of weight, pallor, or anorexia attract attention to the patient. There may, however, be a brief febrile period and onset, characterized as "grippe." On examination, the extensive pulmonary involvement contrasts with the relatively good general condition. Among the physical signs dulness is always marked. The respiratory murmur is either diminished or intensely bronchial. The skin test (tuberculin) is always positive. The sputum is always negative for tubercle bacilli. The course is generally favorable, the duration varying from a month to two years. The signs disappear slowly, and the opacity clears from the periphery toward the centre, leaving finally a hilar shadow corresponding to a tracheobronchial adenopathy. The few deaths recorded have been due to miliary tuberculosis, an acute dissemination, or meningitis. *Diagnosis:* The first thing to rule out is caseous pneumonia, which is always suspected. The onset of this, however, is sudden and febrile, the infiltration progresses rapidly, and the general condition soon deteriorates. The appearance of tubercle bacilli in the sputum is significant of caseous pneumonia. Chronic nontuberculous pneumonias following various infections are distinguished by their history of onset and their sequellae, especially fibrotic retractions and bronchial dilatations, and are accompanied by fever and râles. *Pathology:* It is certain that we are dealing with a pulmonary process. Armand-Delille has proved this by inducing pneumothorax, although he has not succeeded in obtaining satisfactory collapse. There is also general agreement that the process is related to tuberculosis, as all these children have been in close and prolonged contact with a source of infection. But whether the lesion is directly due to tubercle bacilli or a reaction around a limited focus, pulmonary or lymphatic, or is the result of mechanical factors, such as obstruction of blood or lymph vessels at the hilum, is undetermined. Autopsies have yielded conflicting results, Engel having found in one case a carnified lung with disseminated tuberculous nodules, and in two others no macroscopic tubercles but direct contact with caseous hilar glands. Graving-hoff, in one case, found no evidence of tuberculosis except for a calcified lymph node. The hilar pathological changes are invariably on the same side as the pulmonary lesion, and when the latter disappears an exaggerated hilar outline persists, often presenting the appearance of a tumor of the lymph nodes. It is possible that the pulmonary infiltration is localized around the site of the original infection. In some completely cured cases this "epituberculous" infiltration has suddenly reappeared following a dose of tuberculin, suggesting an allergic state of the affected portion of the lung, but always disappearing within two weeks. Ribadeau-Dumas believes we are dealing with a vast congestive reaction, poor in germs, about a small tubercle which is the primary or original lesion. At autopsy there has sometimes been found such a small tubercle in a caseous state, with surrounding catarrhal pneumonia. Woringer, in view of the benign course of this affection, thinks it rather a *lesion de voisinage*, congestive or catarrhal, due to a lymphatic or pulmonary tuberculous lesion at the hilum.—*Infiltration pulmonaire*

chronique survenant chez des enfants tuberculeux et disparaissant après une durée de plusieurs mois, (infiltration épituberculeuse, ou splénopneumonie tuberculeuse chronique), P. Woringer, Rev. d. l. Tuberc., October, 1924, v, 616.—(A. P.)

Tuberculosis with Cavitation in Child.—The authors report the case of a boy aged eight and a half years, very sick and emaciated from a febrile condition, when seen for the first time in May, 1921. At that time he had every evidence of a left-sided ulcerative pulmonary tuberculosis. X-ray examination revealed a cavity, 4 cm. in diameter, in the left upper lobe. The sputum contained enormous numbers of tubercle bacilli. Therapeutic artificial pneumothorax was soon resorted to because of the rapidity with which the boy grew worse. The treatments were continued until the end of the year 1921, when adhesions at the left base prevented further injections. Since that time his condition has improved beyond expectation. His heart is drawn to the left, and the cavity remains. But he has gained weight, his appetite has improved, and his cough and expectoration have diminished. There can be no question that the treatment has greatly prolonged his life, though death seemed imminent when the treatment was started.—*Tuberculose cavitaire chez un enfant, pneumothorax thérapeutique. Résultat éloigné favorable malgré la cessation prématurée du traitement, Bigart, G. Schreiber and Bonnet, Arch. d. Méd. d. Enf., January, 1925, xxviii, 40.—(P. J. W.)*

Differential Diagnosis of Pulmonary Cavities in Children. In two cases, one reported by the author and the other by Strasburger, a false diagnosis of pulmonary cavity was made because the trachea was markedly deviated by a fibrotic process, with resultant amphoric breathing and Wintrich's sign. The diagnosis was especially difficult in one case, in which the trachea was irregularly dilated as a result of traction on both sides of the tracheal wall by fibrotic processes and partly as a result of numerous enlarged lymph nodes which had become adherent to the trachea. Bronchoscopy gave exact findings in this case.—*Zur Differentialdiagnostik der Lungenkaverne im Kindesalter, F. Müller, Beitr. z. Klin. d. Tuberk., 1923, lvii, 224.—(H. J. C.)*

Wassermann Tuberculosis Reaction in Children.—In view of the difficulty in the diagnosis of tuberculosis in childhood on the basis of physical examination a reliable serological method is highly desirable. Although much has been written on the Wassermann tuberculosis reaction in adults no special study has hitherto been made in children. In order to avoid possibility of technical error the author sent blood samples directly to Wassermann's institute for the tuberculosis serum test. A total lack of correlation between the clinical picture and the laboratory diagnosis was the result. The reaction was negative in a number of outspoken cases of bone and lung tuberculosis, and definitely positive in a number of other cases in which there was no suspicion of tuberculosis. Wiese does not believe the Wassermann tuberculosis reaction is a practical aid in the diagnosis of tuberculosis in children.—*Ist die neue Wassermannsche Reaktion (TbWaR) geeignet zur Trennung aktiver und inaktiver Tuberkulose beim Kind? O. Wiese, München. med. Wchnschr., September 5, 1924, lxxi, 1240.—(E. R. L.)*

Tuberculous Inspection in Childhood.—The source of infection of 136 children, who came for treatment on account of manifest tuberculosis, was studied. The number of children with manifest tuberculosis developing from extrafamilial, or unknown sources of infection was greater than that of children developing tuberculosis from intrafamilial infection. In the various age periods the relations were different. During the years of play extrafamilial infection was relatively frequent. Among the extrafamilial infection cases meningitis and miliary tuberculosis were common. These two conditions were also frequent in the early periods of life.—*Intra- und extrafamiliäre Infektion als Ursache manifester Tuberkulose im Kindesalter, E. Brinckmann, Beitr. z. Klin. d. Tuberk., 1924, lviii, 215.—(H. J. C.)*

Tuberculous Infection in Childhood.—Leclerc emphasizes the clinical importance of first infection in childhood, calling attention especially to the lymphatic pulmonary forms. Observations in Quebec confirm the present conception of tuberculosis as a disease contracted in childhood. He outlines the measures necessary to improve the present statistics.—*L'infection tuberculeuse de l'enfance, O. Leclerc, viii • Congrès d. Méd. d. Langue Française, d. l'Amerique d. Nord Quebec, September 10–12, 1924, reported in Presse Méd., November 5, 1924, no. 89, 878.—(A. P.)*

Physical Development of Tuberculous Children.—No essential differences were noted in bodily development among 94 non-tuberculous, 82 occult, 38 pulmonary, and

56 otherwise manifest cases of tuberculosis in children from the ages of 3 to 16 years. The Pirquet body index showed no interference with growth among the tuberculous children. Among the cases of pulmonary tuberculosis there were many more with narrow chests than among the other groups. With relation to the abdominal wall thickness, the manifestly tuberculous probably, partly as a result of dietetic treatment, exceeded the nontuberculous or occult cases. The utilization of underdevelopment, weight, etc., for the diagnosis of tuberculosis in children is warned against.—*Über die körperliche Entwicklung des tuberkulösen Kindes, E. Dudden, Beitr. z. Klin. d. Tuberk., 1923, lvii, 87.*—(*H. J. C.*)

Reaction of Children of Tuberculous Parents toward Tuberculosis Infection.—From an exact study of 90 children, with unquestionably open tuberculosis among their parents, the conclusions are drawn that a high percentage of sucklings become infected; 100 per cent of children of parents whose tuberculosis was fatal were infected. The danger of infection is most to be feared during the first years of childhood. With tuberculosis of the mother there were more female children than male children infected, but with disease in the father there was no difference between the two sexes. Children in good surroundings were not especially safer than those in poorer surroundings. Five children that died of tuberculosis were infected during the first year of life.—*Über das Verhalten der Kinder tuberkulöser Eltern gegenüber der Tuberkuloseinfektion, W. Falk, Beitr. z. Klin. d. Tuberk., 1923, lvii, 228.*—(*H. J. C.*)

Lymphangitis after Cutaneous Tuberculin Tests of Children.—In the course of routine cutaneous tests with tuberculin in children, it was observed that lymphangitis developed in certain instances. This local manifestation varied in severity and extent, and was accompanied by constitutional reactions. Within 24 to 48 hours after the test, a streak of lymphangitis developed as an extension along the lymph channels of the forearm. Supplementary study of the clinical, physical and roentgen-ray findings suggest that lymphangitis occurring with cutaneous tuberculin tests in children is pathognomonic of tuberculosis with an active focus of lymph-node origin. In addition to lymphangitis, induration of adjacent lymp nodes occurred, and a rise in temperature of one or more degrees accompanied the reaction. Lymphangitic reactions could be re-elicited subsequently in the same patients. Skin tests were done according to the established Pirquet technique. Bovine and human tuberculins were used primarily, and in a number of patients "acetyl O. T." and "ether-insoluble X" were used. Eighteen children (13.3 per cent) and four adults (40 per cent) reacted with lymphangitis. All of the juvenile patients had positive histories of exposure. Asthenic symptoms were common. Roentgenological studies demonstrated in 100 per cent of the cases a complete correlation between the positive tuberculin reaction associated with lymphangitis, and tuberculous foci in the hilum or intrapulmonary lymph nodes. Calcification and caseous degeneration are, of course, very important criteria in the diagnosis of the tuberculous nature of the process. The phenomenon of lymphangitis associated with a tuberculin reaction indicates active sensitization of the lymph channels to the products of the tubercle bacillus.—*Studies in Tuberculosis: Significance of Lymphangitis Occurring with Cutaneous Tuberculin Tests in Children, F. Eberson, Am. J. Dis. Child., January, 1925, xxix, 29.*—(*P. J. W.*)

Spontaneous Pneumothorax in Child.—The case was that of a boy, aged 16. Recovery was complete, and uneventful. Spontaneous pneumothorax is not so rare, nor does its occurrence always cause grave disturbance to the patient. It is rare in children, more common in adults between 25 and 35 years, and is likely to occur to people engaged in heavy occupations, when severe and sudden strain brings about a rupture of a long-standing pulmonary and pleural lesion, usually of a tuberculous nature. A number of references to the literature are cited.—*Report of a Case of Spontaneous Pneumothorax in a Young Boy, H. Apfel, Med. J. & Rec., February 18, 1925, cxxi, 216.*—(*B. T. McM.*)

Tuberculosis with Cavity in Child Treated by Artificial Pneumothorax.—A child, at the age of 8½ years, presented an ulcerative tuberculosis of the left lung, with a cavity, 4 cm. in diameter, shown by roentgenogram. The sputum was richly bacilliferous. There was persistent oscillating fever, and a fatal issue seemed imminent. Pneumothorax was tried, as the right lung appeared clear. At the end of five months the appearance of an effusion and adhesions cut short the treatment. Nevertheless, the results were remarkably favorable. Three years later the child appeared flourishing, had gained 18 kg. in weight, and had no fever. Roentgenograms showed retraction of the left thorax, heart and trachea, and disappearance of the previous involvement of the lung. This observation shows that

pneumothorax may be utilized in desperate cases in children as well as adults.—*Tuberculose cavitaire chez un enfant; pneumothorax thérapeutique; resultat éliogné favorable malgré la cessation prématurée du traitment, Bigart, G. Schreiber and Bonnet, meeting, Soc. d. Pédiatrie, October 21, 1924, reported in Presse Méd., November 5, 1924, no. 89, 880.*—(*A. P.*)

Treatment of Tuberculous Children by Injections of Methylic Antigen.—In a preliminary group of 15 children observed clinically there was noted a marked improvement in the general condition, especially a rapid increase in weight and stabilization of the temperature curve. The physical signs gave the impression of drying and sclerosis of the lesions. In one child who succumbed an extensive sclerosis was found at autopsy. Weekly injections were given intramuscularly, beginning with a 1 to 10 dilution and increasing as with tuberculin. Transitory thermic reactions may occur. The complement-fixation reaction became stronger in most of those treated, and in two became positive although previously negative. It is concluded that injections of methylic antigen are innocuous when given to tuberculous children according to the method described, and seem to induce favorable modifications in the general state with a tendency to fibrosis of the local lesions.—*Étude de l'influence des injections d'antigène méthylique pratiquées chez un certain nombre d'enfants tuberculeux, P. Armand-Delille, G. Duhamel, and P. Marty, Section d'études scientifiques d. l'Oeuvre d. l. Tuberc., June 14, 1924, reported in Rev. d. l. Tuberc., August, 1924, v, 534.*—(*A. P.*)

Petruschky's Percutaneous Tuberculin Treatment for Children.—The percutaneous tuberculin treatment, according to Petruschky, is simple, cheap and harmless. It is especially suited for dispensary use, although there may be difficulty in that children will not come regularly for their treatment. The treatment produces mild focal reactions, increases the skin allergy and has a favorable influence on chronic secondary disease. Although mild forms of secondary tuberculosis as a rule heal spontaneously, mild specific treatment as an aid is recommended. The permanent end results cannot yet be given.—*Über sekundäre Tuberkulose bei Schulkindern und ihre Behandlung durch die Fürsorgestelle, insbesondere mit Linimentum Tuberculini compositum nach Petruschky, H. Kiermayr, Beitr. z. Klin. d. Tuberk., 1923, lvii, 239.*—(*H. J. C.*)

Treatment of Tuberculosis in Children with Petruschky's Liniment.—Five-hundred children, otherwise treated in identical fashion, when Pirquet positive, were given Petruschky's therapy, and their weight, size and chest measurements were compared with a like group of children not treated specifically. There occurred a distinct increase in all of these dimensions after the treatment. In 69 of 138 treated cases, reactions occurred, comprising subfebrile temperature, catarrhal symptoms, lymph-node enlargement, etc.—*Über Petruschky-Einreibungen in einer Kinderanstalt, F. Redeker, Beitr. z. Klin. d. Tuberk., 1924, lviii, 200.*—(*H. J. C.*)

Prophylaxis of Tuberculosis in Children.—Dubé believes that the child must, so far as possible, be removed from sources of infection. His resistance must also be built up, as the *terrain* has an important influence on the evolution of tuberculosis. A survey of the tubercle-bacillus carriers in any community ought to be made, and they must be advised how to dispose of their bacilli.—*La prophylaxiede la tuberculose par les soins donnés à l'enfant, J. E. Dubé, viii^e Congrès d. Méd., d. Langue Française d. l'Amérique d. Nord, Quebec, September 10–12, 1924, reported in Presse Méd., November 5, 1924, no. 89, 878.*—(*A. P.*)

Natural Tuberculous Infection of Rabbits.—Of four young rabbits left in contact with their mother, which received an intravenous inoculation of virulent bovine bacilli, three, a month later, showed a tuberculous adenopathy of the mesenteric lymph nodes without pulmonary or intestinal lesions.—*Sur l'infection tuberculeuse des jeunes lapins, J. Valtis, meeting, Société de Biologie, October 18, 1924, reported in Presse Méd., October 22, 1924, no. 85, 840.*—(*B. T. McM.*)

Cause of Immunity of Fowls to Human Tuberculosis.—Auclair has succeeded in extracting from the tissues of certain barnyard fowls a substance which apparently explains their resistance to human tuberculosis. This substance, becoming active only under certain conditions, is then able to digest tubercle bacilli *in vivo* and *in vitro*. Bacilli, exposed to this action, become innocuous for guinea pigs. The same is true of bacilli, first mixed with the substance in its active form, and then injected into the animal. Likewise, no disease develops if this substance, in its active form, and the bacilli are injected into the guinea pig separately and at two different points of

the body. The experiments were controlled. The nature of the immune substance and the method of its isolation are not mentioned. Its employment as a therapeutic agent is suggested.—*La cause probable de l'immunité naturelle des oiseux contre la tuberculose humaine et son application à la digestion du bacille de Koch dans l'organisme du cobaye, J. Auclair, meeting, Académie des Sciences, July 21, 1924, reported in Presse Méd., August 6, 1924, no. 63, 664.—(J. B. A.)*

Tendency of Apices to Chronic Tuberculous Infection.—Why Does Chronic Pulmonary Tuberculosis Begin in the Apices.—A historical review of present views on the question of the apical origin of chronic pulmonary tuberculosis is given. The primary effect is found, in the majority of cases, in the better aerated parts of the lung, contradicting the idea that the place of first exposition also becomes the site of infection. Reinfection in the allergic organism requires for its occurrence two conditions, namely, the general and the local disposition to disease. If the latter is based on anatomical factors it has a greater influence, since it is always present, while a general disposition need not be. The most frequent cause of reinfection focalization is to be sought in the local disposition. This is, as is well known, most frequently present in the apices; and it does not depend upon an increased exposition (since the bacilli are equally distributed to the lower parts of the lung) but on an increased retention of bacilli in the apices. After the inhalation of light coal dust the apices and upper lobes become most heavily involved. The tubercle bacillus behaves like light coal dust. Anatomically and functionally, the apex differs from the remainder of the lung in that it extends above the bony chest, and is covered with muscle and fascia, besides its limitation occasioned by the first rib, especially when early calcification as well as scoliosis occurs. Practically, however, these factors are of less importance than the increased local disposition of the apex. Otherwise, children without calcified first ribs would not show pulmonary apical affection. The old question of whether the apex respires better or less than the rest of the lung is easily understood when it is known that the movement of the apex is dependent upon that of the lower parts of the lung. If they respire markedly the apex is well aerated, if poorly the apex is poorly aerated. Krönig found that with typical nasal respiration the apices were quiet, while with mouth respiration this was not so. With diminished elasticity of the trachea and bronchi resulting from age or from lymph nodes, there is diminished aeration of the apex. Not only the poorer aeration of the apex, but also the lessened lymph and blood supply, is important for the lodgment of bacilli.—*Warum beginnt die chronische Lungenschwindsucht in der Spitze? H. Beitzke, Beitr. z. Klin. d. Tuberk., 1924, lvii, 351.—(H. J. C.)*

Experimental Production of Tuberculous Cavities.—Giant cavities have been produced in the rabbit almost constantly by employing intratracheal injections and reinfecting by the same route with large doses, 5 to 10 cgm. of tubercle bacilli. Smaller doses produce rapid caseating lesions but without loss of substance. These lesions of secondary infection differ markedly from the diffuse noncaseating lesions obtained by primary subcutaneous injection. They demonstrate the development of an allergic state or reaction in the rabbit, and also that no immunity is conferred by a previous infection.—*Cavernes tuberculeuses obtenues expérimentalement chez le lapin, A. Philibert and F. Cordey, meeting, Soc. d. Biologie, November 15, 1924, reported in Presse Méd., November 19, 1924, no. 93, 921.—(A. P.)*

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